

Telkonet SmartEnergy



Energy Management

“Reducing energy costs by just 10% is equivalent to a \$1.35 ADR increase for full service hotels.”

New York State Energy and Development Authority



Telkonet SmartEnergy™ (TSE) controls HVAC usage and improves energy efficiency by adjusting and maintaining a room's temperature based on occupancy, using a combination of occupancy sensors, intelligent programmable thermostats or packaged terminal air conditioner (PTAC) controllers. TSE eliminates wasteful heating and cooling of vacant rooms without compromising an occupant's comfort based on our patented Recovery Time™ technology.

Building on the proven capabilities of the TSE system and incorporating Telkonet's unique **Recovery Time™** technology, our new **Networked Telkonet SmartEnergy (NTSE)** advances intelligent HVAC building control with a flexible, resilient and low-cost energy management platform. NTSE utilizes a ZigBee wireless IEEE802.15.4 “mesh” network, where each device functions as a wireless repeater and enables energy management thermostats to communicate with each other and aggregate communications up to a single master NTSE Gateway Server on site. NTSE enables central control without needing expensive back-haul wiring. Its key monitoring and analysis features ensure optimum energy savings, giving property owners the tools to identify and implement energy savings, providing total visibility and detailed data about a property's HVAC system and its energy consumption, together with real-time, instant remote management capabilities.

Key features and benefits of NTSE

- Room occupancy detection – Detects when rooms are unsold, resulting in deeper energy savings
- Proactive issue response – Detects changes in efficiency and operational effectiveness of HVAC equipment to resolve issues quickly and effectively
- Remote management – Enables real-time monitoring and management of all NTSE devices via the web-based portal, Telkonet CENTRAL, where management can dynamically control, monitor status, and define rules and events for HVAC system operability, en mass and individually
- Thermostat Operation Profiles – Enables easy adjustments of profiles via Telkonet CENTRAL, including Default, Maintenance, Unsold, Deep Setback, and Demand Profiles

Reduce Your HVAC Costs and Ensure Guest Comfort



It's easier than ever to take control over your guestroom heating and cooling usage. With the new Networked Telkonet SmartEnergy, you can use your existing HSIA infrastructure to network our programmable thermostats and guest room occupancy sensors.

You'll maximize your energy savings in vacant rooms, while ensuring rooms are comfortable for your guests when they arrive and throughout their stay. Best of all, you can easily manage your entire HVAC system using any web browser – change settings, view energy savings reports, and much more – giving you total control.

Learn how much you can save on your utility bills with our free energy savings projection.

**Networked
Telkonet SmartEnergy**

INFORMATION

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- Detailed energy management reports – Measurement and verification (M&V) analysis, including reports for System Efficiency, Occupancy, Savings, System Status, and System Diagnostics
- Quick, easy access to management energy savings reports, analysis, payback information and ROI
- Simple integration with Property Management Systems (PMS)
- Peak demand load shedding
- Network outage and maintenance alerts



Both TSE and NTSE incorporate our exclusive **Recovery Time (RT)** technology which sets us apart from other energy management systems that use fixed setback systems, where unoccupied rooms are set to one fixed temperature or changed by a fixed deviation. With RT, property management can select how long it will take for a room to return to the occupant's preferred temperature setting when the room is occupied. RT technology constantly performs calculations so the unoccupied room temperature will only drift far enough to ensure it can achieve this recovery time. Each room is evaluated independently in real-time to determine its energy efficient temperature, or setback, based on many environmental

conditions, such as room location, window placement, dry vs. humid climate, varying weather conditions, the HVAC unit, and so on. As a result, RT technology delivers optimum energy savings without compromising occupant comfort.

"...TSE's applications are numerous, such as eliminating problems with frozen pipes that break once thawed and avoiding air conditioner freeze-ups from running continuously in the summer. The networked version of TSE will also be invaluable in the future, with its ability remotely to adjust temperatures online."

Brian Brandstetter, President, Cornerstone Hotel Management

Key features and benefits of TSE and NTSE

- Improved profitability and maximum room-by-room energy savings while ensuring occupant comfort, even when occupants are sleeping or very still
- Patented Recovery Time technology with the option for management to set the recovery time desired
- Reduced operation expenses, reduced wear and tear on HVAC units and improved service
- Wireless retrofit for simple, seamless installation
- Low installation costs by using wireless technology communicating via radio frequency
- Humidity protection and control with refresh cycle and direct relative humidity percentage targeting
- Self-healing network architecture
- Dynamic reconfiguration
- Network polling from the Gateway server to the thermostat every 15 minutes
- Rapid ROI of typically 2 to 3 years with integrated ROI calculation tools

Telkonet's Energy Management Customers

Telkonet's energy management systems are installed in over 90,000 rooms throughout the US, helping a wide variety of customers reduce their energy consumption, including hotels, timeshare resorts, military facilities and schools. Major utilities with energy efficiency programs are also deploying our energy management solutions for energy-saving retrofits for hotels and motels, which can benefit from available rebates and funding programs.

Telkonet energy management systems are used by a wide variety of customers, including:

- Austin Independent School District
- Cornerstone Hotel Management
- Motel 6
- Vantage Hospitality
- Habitat Suites
- Radisson Hotel & Conference Center
- Lodge Alley Inn

Telkonet Energy Management Product Components

The Telkonet SS2000 Energy Management Occupancy Sensor communicates via a wireless radio link or

hard-wired connection to the SS5000 Energy Management Thermostat or the SS1107 Energy Management Controller. The SS2000 senses when a room is occupied or vacant; when occupied, the SS2000 sends wireless signals to the SS5000 or the SS1107, which adjust the temperature to energy saving mode, reducing HVAC runtime. Once a room is occupied, the SS2000 senses the motion and body heat and immediately send a wireless signal to the SS1107 or SS5000, which responds by recovering to the occupant's setpoint within the assigned recovery time.

Networked Telkonet Smart Energy (NTSE) utilizes a wireless IEEE802.15.4 "mesh" network, where each device functions as a wireless repeater and enables energy management thermostats to communicate with each other and aggregate communications up to a single master NTSE Gateway Server on site.

[Telkonet SS2000 Energy Management Sensor](#)

The SS2000 uses digital signal processing and passive infrared technology to detect motion and body heat in a room, including sensing when a person is sleeping. Typically placed on the ceiling, the SS2000 communicates via wireless radio link to the SS5000 or the SS1107.



[Telkonet SS5000 Energy Management Thermostat](#)

In rooms with central or room-controlled HVAC systems with thermostats, the SS5000 maintains the occupant's preferred setpoint (temperature setting) when the room is occupied. When vacant, the SS5000 recalculates the setpoint, allowing the temperature to drift to the new temperature determined by the preferred Recovery time. The SS5000 regularly adjusts the temperature to energy-efficient settings.



[Telkonet SS1107 Energy Management Controller](#)

In rooms with packaged terminal air conditioners (PTACs), an SS1107 maintains the occupant's preferred setpoint (temperature setting) when the room is occupied. When vacant, the SS1107 works with the PTAC unit to adjust the setpoint to the new energy efficient temperature. This will continue until the occupant re-enters the room and the SS1107 allows the PTAC to return the temperature to the occupant's original setpoint within the predetermined recovery time.

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Green Trends in 2010

Green alternatives that can be easily implemented into existing facilities. [Read more](#)

Energy Solutions

Education facilities managers are faced with a daunting set of challenges: They must find new ways to reduce energy consumption and carry out greener energy policies. HVAC typically accounts for more than 30 percent of a building's electricity costs, so there is a clear incentive to eliminate unnecessary heating and cooling of unoccupied rooms. [Read more](#)

To learn more about the efficiency programs available in your area, visit [DSIRE USA](#).

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